

Serial No.: 09/822,792
Attorney Docket No.: DP-304351
Amendment

for new claim 19 is found in canceled claims 6 and 13, figure 4, and the specification, page 6 line 28 to page 7 line 4. Support for new claims 20-25 is found in canceled claims 7-12. Support for new claim 26 is found in canceled claims 1 and 3, figure 4, and the specification, page 6 line 28 to page 7 line 4.

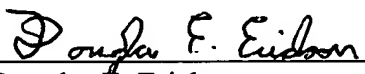
Applicants believe that the magnetorheological damper claimed in independent claims 16, 19 and 26 with the detailed structure of the valve is patentable over the art of record. The other added claims depend from a corresponding one of claims 16, 19 and 26.

It is clear that the patents cited by the Examiner, taken alone or in combination, do not teach, suggest, or describe the subject matter of Applicants' claimed invention.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

Inasmuch as each of the rejections has been answered by the above remarks and amended claim, it is respectfully requested that the rejections be withdrawn, and that this application be passed to issue.

Respectfully submitted,


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Version with markings to show changes made

In the claims:

New claims 16-26 have been added as follows:

--16. A magnetorheological damper comprising:

- a) an inner tube having an imperforate sidewall;
- b) a magnetorheological piston disposed within and slideably engaging the inner tube;
- c) an outer tube surrounding the inner tube, wherein the outer tube is in fluid

communication with the inner tube, wherein no other tube is disposed between and spaced apart from the inner and outer tubes; and

d) a valve disposed proximate the first end of the inner tube and providing fluid communication of the outer tube with the inner tube, wherein the valve includes first and second discs, a valve body having at least one orifice, a spring, a bolt having a bolt head, and a nut engaged with the bolt to secure together the first and second discs, the valve body, and the spring, wherein the valve body is disposed between the first and second discs, wherein the second disc is disposed between the valve body and the spring, wherein the spring is disposed between the second disc and the nut, and wherein the first disc is disposed between the bolt head and the valve body.

17. The magnetorheological damper of claim 16, wherein the inner tube has a first end and has a second end, wherein the outer tube is in fluid communication with the inner tube proximate the first end of the inner tube, and wherein fluid flows out of and into the inner tube only proximate the first end of the inner tube.

18. The magnetorheological damper of claim 17 also including a rod having a first end attached to the magnetorheological piston and having a second end extending outside the inner and outer tubes, wherein the second end of the inner tube is disposed between the first end of the inner tube and the second end of the rod, and wherein the rod contains an electrode operatively connected to the magnetorheological piston.

19. A magnetorheological damper comprising:

- a) an inner tube having an imperforate sidewall;
- b) a magnetorheological fluid, wherein at least a portion of the magnetorheological fluid is disposed in the inner tube;
- c) a magnetorheological piston disposed within and slideably engaging the inner tube and contacting the magnetorheological fluid;
- d) an outer tube surrounding the inner tube, wherein the outer tube is in fluid communication with the magnetorheological fluid in the inner tube, wherein no other tube is disposed between and spaced apart from the inner and outer tubes; and
- e) a valve disposed proximate the first end of the inner tube and providing fluid communication of the outer tube with the inner tube, wherein the valve includes first and second discs, a valve body having at least one orifice, a spring, a bolt having a bolt head, and a nut engaged with the bolt to secure together the first and second discs, the valve body, and the spring, wherein the valve body is disposed between the first and second discs, wherein the second disc is disposed between the valve body and the spring, wherein the spring is disposed between the second disc and the nut, and wherein the first disc is disposed between the bolt head and the valve body.

20. The magnetorheological damper of claim 19, wherein the magnetorheological piston has a magnetically energizable passageway, and wherein the passageway contains a portion of the magnetorheological fluid.

21. The magnetorheological damper of claim 19, wherein the outer tube contains a portion of the magnetorheological fluid.

22. The magnetorheological damper of claim 21, wherein the magnetorheological fluid in the outer tube is essentially magnetically unaffected by the magnetorheological piston.

23. The magnetorheological damper of claim 21 wherein the inner tube has a first end and a second end, wherein the outer tube is in fluid communication with the inner tube proximate the

first end of the inner tube, and wherein fluid flows out of and into the inner tube only proximate the first end of the inner tube.

24. The magnetorheological damper of claim 23, wherein the outer tube contains a gas, wherein the outer tube has a first end proximate the first end of the inner tube and has a second end proximate the second end of the inner tube, and wherein the gas is disposed between the magnetorheological fluid of the outer tube and the second end of the outer tube.

25. The magnetorheological damper of claim 23, also including a rod having a first end attached to the magnetorheological piston and having a second end extending outside the inner and outer tubes, wherein the second end of the inner tube is disposed between the first end of the inner tube and the second end of the rod, and wherein the rod contains an electrode operatively connected to the magnetorheological piston.

26. A magnetorheological damper comprising:

- a) an inner tube having an imperforate sidewall;
- b) a magnetorheological piston disposed within and slideably engaging the inner tube;
- c) an outer tube surrounding the inner tube, wherein the outer tube is in fluid communication with the inner tube, wherein no other tube is disposed between and spaced apart from the inner and outer tubes; and
- d) a valve disposed proximate the first end of the inner tube and providing fluid communication of the outer tube with the inner tube, wherein the valve includes first and second discs, a valve body having at least one orifice, and a spring, wherein the valve body is disposed between the first and second discs, wherein the second disc is disposed between the valve body and the spring, wherein the spring has a first axial end distal the second disc and a second axial end proximate the second disc, and wherein the first axial end of the spring is axially immovable with respect to the inner tube.--